Liebert® GXT3™

8000 & 10000VA RT208 Rack-Tower models, Dual Inverter

GUIDE SPECIFICATIONS

1.0 GENERAL

1.1 SUMMARY

This specification shall define the electrical and mechanical characteristics and requirements for a continuous-duty, single-phase, solid-state uninterruptible power system (UPS). The UPS shall provide high-quality AC power for sensitive, electronic equipment loads. The UPS is not designed to support large inductive or half-wave rectified loads, for example: motors, compressors, vacuum pumps, electric drills, laser printers and hair dryers.

1.2 STANDARDS

The UPS shall be designed in accordance with applicable sections of the current revision of the following documents. Where a conflict arises between these documents and statements made herein, the statements in this specification shall govern.

208V Nominal Units

- UL Standard 1778, c-UL
- CSA 22.2 No. 107.1
- NEMA Type 1 Enclosure
- FCC Part 15, Class A
- CISPR22 Class A (RFI)
- IEC 61000-3-12 (Harmonics)
- IEC/EN/AS 62040-2 2nd Ed (Cat 2 - Table 6):
    - EN61000-4-2, Level 4, Criteria A
    - EN61000-4-3, Level 3, Criteria A
    - EN61000-4-4, Level 4, Criteria A
    - EN61000-4-5, Level 3, Criteria A
    - EN61000-4-6
- ANSI C62.41, Category A
- EN61000-4-5, Level 3, Criteria A
- RoHS (6 by 6)
- ISTA Procedure 1A

1.3 SYSTEM DESCRIPTION

1.3.1 Modes of Operation

The UPS shall be designed to operate as a true on-line double conversion system in the following modes:

A. Normal - During normal operation, utility power shall provide energy to the UPS. The filters, the power factor correction circuit and the inverter shall process this power to provide computer-grade power to connected loads. The UPS shall maintain the batteries in a fully charged state.

B. Battery - The UPS shall enter Battery mode if there is an extreme power surge, extreme power sag or utility failure. The battery system shall supply power through the DC-to-DC converter to the inverter to generate computer-grade power for the connected load.

C. Recharge - When the UPS is supplied with qualified utility power, the UPS shall charge connected internal and optional external battery cabinets (if connected).

D. Internal Bypass - Bypass mode shall provide an alternate path for utility power to the connected load in the unlikely event of a UPS malfunction, such as overload, overtemperature or an internal circuit failure.

E. Maintenance Bypass - Maintenance Bypass mode shall provide an alternate path for utility power to the connected load during UPS maintenance or UPS replacement.

F. Automatic Restart - Upon restoration of utility power after a utility outage and complete battery discharge, the UPS shall be able to automatically restart and resume supplying power to the critical load based on the settings in the supplied configuration program.

1.3.2 Design Requirements

A. Voltage: Shall operate at either 120/208V or 120/240V by sensing the utility phase angle and configuring the dual inverters to the same angle: 120 or 240 degrees (or) 180 degrees. Nominal input/output voltage specifications of the UPS at rated load shall be:

Input

The UPS shall automatically configure itself to operate from 120/208V, 50/60Hz (or) 120/ 240V, 50/60Hz without the use of selector switches or voltage taps. Input wiring must be 3-wire plus ground (L1, L2, N, G, with N solid bonded to G at the distribution panel).

Output

Output voltage shall be present at terminals L1, L2 and N. The output voltage shall be automatically set to match input voltage of 120/208V, 50/60Hz (or) 120/240V, 50/60Hz. Voltage measured between L1-N and L2-N: 120VAC ±3%, 50/60Hz; L1-L2: 208 or 240VAC (auto-sensing to match input phase angle) ±5%, 50/60Hz. The UPS shall be configurable using the included configuration program to provide the following alternate voltages:

127/220V, 115/230V, 110/220V, 100/200V, all voltages ±3% at 50 or 60Hz.

(If the UPS is started on battery with no input power present, the default output voltage shall be 120/208V, 60Hz from the factory. After the UPS has been started from utility, the output voltage/frequency shall match the last known input voltage/frequency that was applied.)

B. Output Load Capacity: Specified output load capacity of the UPS shall be:

8000RT208 models

VA	Watts	VAC Output
4000	3600	115 / 120 / 127
3600	3240	110
3200	2880	100
8000	7200	120 / 208 (120 or 240 degree only)
8000	7200	120 / 208 (180 degree only)
8000	7200	127 / 220 (120 or 240 degree only)
7200	6480	110 / 220 (180 degree only)
8000	7200	115 / 230 (180 degree only)
6400	5760	100 / 200 (180 degree)

10000RT208 models

VA	Watts	VAC Output
5000	4500	115 / 120 / 127
4500	4050	110
4000	3600	100
10000	9000	120 / 208 (120 or 240 degree only)
10000	9000	120 / 208 (180 degree only)
10000	9000	127 / 220 (120 or 240 degree only)
9000	8100	110 / 220 (180 degree only)
10000	9000	115 / 230 (180 degree only)
8000	7200	100 / 200 (180 degree)

C. Internal Battery: Valve-regulated, non-spillable, lead acid cells.

D. Battery Reserve Time: Minimum 4 minutes with an ambient temperature of 77°F (25°C).

E. Battery Recharge: The UPS shall contain a battery recharge rate designed to prolong battery life. Recharge time for UPS internal batteries shall be 3 hours maximum to 90% capacity after a complete discharge into full load.

1.3.3 Performance Requirements

1.3.3.1 AC Input to UPS

A. Voltage: The point at which the UPS transfers to battery operation shall be dependent on the amount of load that the UPS is supporting. The UPS shall operate from the following voltage ranges without drawing power from the batteries:

Low Line Voltage Range

Low Line Voltage		GXT3-8000RT208	GXT3-10000RT208
100% to 91%	L/L Transfer	88 ± 3.1VAC	93 ± 3.1VAC
	L/L Comeback	95 ± 3.1VAC	100 ± 3.1VAC
90% to 71%	L/L Transfer	84 ± 3.1VAC	84 ± 3.1VAC
	L/L Comeback	91 ± 3.1VAC	91 ± 3.1VAC
70% to 31%	L/L Transfer	70 ± 3.1VAC	70 ± 3.1VAC
	L/L Comeback	77 ± 3.1VAC	77 ± 3.1VAC
30% to 0%	L/L Transfer	60 ± 3.1VAC	60 ± 3.1VAC
	L/L Comeback	67 ± 3.1VAC	67 ± 3.1VAC

High Line Voltage Range

High Line Voltage	208V Models
High Line Transfer	139.5 ± 3.1VAC
High Line Comeback	132.5 ± 3.1VAC

B. Frequency: The UPS shall auto-sense input frequency of 50Hz or 60Hz when first powered up and shall use this frequency as the default output frequency. Once started the input frequency operating window shall be 40-70Hz without going to batteries. The UPS shall be capable of cold start with a default output frequency of 60Hz.

C. Input Power Factor: >0.99 lagging at rated load.

D. Input Current reflected distortion: 5% THD maximum at rated load.

E. Input Current Ratings:

UPS Model #	VA	Watt	Hz	VAC	L1	L2	Total Amps
GXT3-8000RT208	5000	4000	50/60	120/240	20.8	20.8	41.6
	5000	4000	50/60	115/230	21.7	21.7	43.5
	5000	4000	50/60	120/208	20.8	20.8	41.7
	4500	3600	50/60	110/220	20.8	20.8	41.5
	4000	3200	50/60	100/200	21.7	21.7	43.5
GXT3-10000RT208	6000	5400	50/60	120/240	27.2	27.2	54.3
	5600	4800	50/60	115/230	25.5	25.5	51
	6000	4800	50/60	120/208	24.5	24.5	48.9
	5400	4320	50/60	110/220	24.5	24.5	49

F. Surge Protection: The UPS shall utilize metal oxide varistors (MOVs) rated at 175V, 150 Joules minimum connected L1-N and L2-N; 300V, 150 Joules minimum connected L1-G, L2-G and N-G.

1.3.3.2 AC Output, UPS Inverters

A. Voltage Configuration: 50/60Hz, single-phase, 3-wire-plus-ground.

Default setting 120/208V. Output L-N voltage shall be selectable via the included UPS configuration program. Optional settings shall be 100/200V, 110/220V, 115/230V, 120/208V, 120/240V or 127/220V. The UPS shall adjust sinewave amplitude and/or phase-angle relationship of the inverters to produce the selected voltage to match the input.

Note: At 100/200V setting, the UPS shall be derated to 80% of the rated 120/208V capacity; at 110/220V, the UPS shall be derated to 90% of the rated 120/208V capacity.

B. Voltage Regulation: L1-N and L2-N: ±3% steady state.
L1-L2: ±5% steady state.

C. Frequency Regulation: ±3.5Hz synchronized to utility / mains.
±0.1Hz free running or on battery operation.

D. Frequency Slew Rate: 1.0Hz per second maximum

E. Load Power Factor Range: 0.65 lagging to 1.0 (unity)

F. Voltage Distortion: Sinusoidal Waveform; ≤3% total harmonic distortion (THD) into a 100% linear load; ≤5% THD into a 100% non-linear load with a crest factor ratio of 3:1.

G. Inverter Overload Capability:

Overload Percent	Duration Inverter shall support rated load
105% to 130%	1 minute
131% to 150%	10 seconds
151% to 200%	1 second
>200% (impact load)	At least 5 cycles

H. Voltage Transient Response: ±7% on-line or Battery mode for 0-100-0 % loading of the UPS, ±4% on-line or Battery mode for 20-100-20 % loading of the UPS.

I. Transient Recovery Time: To nominal voltage within 166 milliseconds.

J. Efficiency: 91% AC-AC

1.4 ENVIRONMENTAL CONDITIONS

A. Ambient Temperature

Operating: 32°F to 104°F (0°C to 40°C) for altitudes 0 to 5,000 feet (0 to 1500 meters) above sea level.
32°F to 95°F (0°C to 30°C) for altitudes 5,000 to 10,000 feet (1500 to 3000 meters) above sea level.

Storage: 5°F to 122°F (-15°C to +50°C)
GXT3-288RTVBATT and GXT3-288RTVBATKIT: 68°F (20°C) for optimum battery storage.
Battery systems should not be stored for extended periods above 77°F (25°C)

B. Relative Humidity

Operating: 0 to 95% non-condensing.

Storage: 0 to 95% non-condensing.

C. Altitude

10,000ft. (3,000m) max, without power derating when operated within the temperature specified in Section 1.4, Item A. Ambient temperature shall be derated by 9°F (5°C) for each additional 1600ft. (500m) above 10,000ft. (3,000m).

D. Audible Noise

Noise generated by the UPS under normal operation shall not exceed 55dBA when measured at 3.2ft. (1m) from the surface of the UPS.

E. Electrostatic Discharge

The UPS shall be able to withstand an electrostatic discharge compliant to EN61000-4-2, level 4, Criteria A, without damage and shall not affect the connected load.

1.5 USER DOCUMENTATION

The specified UPS system shall be supplied with a Safety Warning Sheet. The UPS and Configuration Program user manual shall be on an included CD. The user manual shall include installation drawings and instructions, a functional description of the equipment with block diagrams, safety precautions, illustrations, step-by-step operating procedures, general maintenance guidelines, troubleshooting information and product specifications.

1.6 WARRANTY

The UPS shall be warranted against defects in materials and workmanship for two (2) years. Optional one (1) and three (3) year full coverage extended warranties shall be available from Emerson Network Power.

1.7 QUALITY ASSURANCE

1.7.1 Manufacturer’s Qualifications

More than 30 years experience in the design, manufacture and testing of solid-state UPS systems. The manufacturer shall be certified to ISO 9001:2008.

1.7.2 Factory Testing

Before shipment, the manufacturer shall fully and completely test the system to ensure compliance with the specification. These tests shall include operational discharge and recharge tests on the internal battery to ensure performance.

2.0 PRODUCT

2.1 FABRICATION

All materials and components making up the UPS shall be new, of current manufacture and shall not have been in prior service except as required during factory testing. All relays shall be provided with dust covers.

2.1.1 Wiring

Wiring practices, materials and coding shall be in accordance with the requirements the standards listed in Section 1.2 and other applicable codes and standards. All wiring shall be copper.

2.1.2 Cabinet

The UPS unit shall be composed of: input PFC converter, battery charger, dual-inverter, input filter and internal bypass circuit; and batteries consisting of the appropriate number of sealed battery cells; and shall be housed in a rack-tower NEMA type 1 enclosure and shall meet the requirements of IP20. The UPS cabinet shall be cleaned, primed and painted RAL 7021 Black. The internal battery unit shall be shipped separately and shall be installed during the UPS installation process.

2.1.3 Matching Battery Cabinets

The optional Rack-Tower battery cabinet shall contain valve-regulated, non-spillable, lead acid cells, housed in a separate cabinet that matches the UPS cabinet styling. The cabinet shall be cleaned, primed and painted Black RAL 7021. The external battery system shall be sized to provide an additional 9-11 minutes of reserve power at rated load. The matching battery cabinet shall include an 18" (0.45m) detachable, molded interconnect cable, circuit breaker overcurrent protection and provisions for daisy-chain connection of additional battery cabinets.

The model numbers, dimensions and weight information of the UPS cabinet and optional external battery cabinet shall be as follows:

Model	Rack Dimensions W x D x H, in. (mm)	Tower Dimensions W x D x H, in. (mm)	Weight lb. (kg)
GXT3-8000RT208	16.9 x 26.5 x 10.3 (430 x 672 x 261)	10.3 x 26.5 x 16.9 (261 x 672 x 430)	221 (100.2)*
GXT3-10000RT208	16.9 x 26.5 x 10.3 (430 x 672 x 261)	10.3 x 26.5 x 16.9 (261 x 672 x 430)	221 (100.2)*
GXT3-288RTVBATT (Optional External Battery)	16.9 x 26.5 x 6.8 (430 x 672 x 173)	6.8 x 26.5 x 16.9 (173 x 672 x 430)	172 (78)*
* Specified weights include the standard two (2) internal battery kits, Part Number GXT3-288RTBKIT.			

2.1.4 Cooling

The UPS shall be forced air cooled by internally mounted, continuous fans. Fan power shall be provided from the internal DC supply. Air intake shall be through the front of the unit, and air exhaust shall be out the rear of the unit.

2.2 COMPONENTS

2.2.1 Input Converter

2.2.1.1 General

Incoming AC power shall be converted to regulated DC power by the input converter for supplying DC power to the inverter. The input converter shall provide input power factor correction (PFC) and input current distortion reduction.

2.2.1.2 AC Input Current Limit

The input shall use the power necessary to operate the load attached to the output before going to batteries. The UPS shall not use electronic input current limiting. The UPS shall include a 2-pole switch-type 60A input breaker.

2.2.1.3 Input Protection

The UPS shall have built-in protection against undervoltage, overcurrent and overvoltage conditions including low-energy lightning surges, introduced on the primary AC source. The 208VAC models shall sustain input surges without damage per criteria listed in ANSI C62.41 Cat. A.

2.2.1.4 Battery Recharge

The UPS shall contain a battery recharge rate designed to prolong battery life. The battery shall be constant current charged to restore capacity, then shall be constant voltage charged to maintain the battery in a fully charged state. Recharge time for the internal battery shall be 3 hours maximum to 90% capacity (full load discharge rate). There shall be DC overvoltage protection so that if the DC voltage exceeds the pre-set limit, the inverter shall shut down automatically and the critical load shall be transferred to internal bypass.

2.2.2 Inverters

2.2.2.1 General

The UPS inverters shall be of a pulse-width-modulated (PWM), IGBT design capable of providing the specified AC output. The inverters shall convert DC power from the input rectifier output or the battery into precise sinewave AC power for supporting the critical AC load.

2.2.2.2 Overload

The inverter shall be capable of supplying current and voltage for overloads exceeding 100% and up to 201% of full load current. A visual indicator and audible alarm shall indicate overload operation. For greater currents or longer time duration, the inverter shall have electronic current-limiting protection on the output to prevent damage to components. The inverter shall be self-protecting against any magnitude of connected output overload. Inverter control logic shall sense and disconnect the inverter from the critical AC load without the requirement to clear protective devices.

2.2.2.3 Inverter DC Protection

The inverter shall be protected by the following DC shutdown levels:

- DC Overvoltage Shutdown
- DC Undervoltage Shutdown (End of Discharge)

2.2.2.4 Output Frequency

An oscillator shall control the output frequency of the UPS. The inverter shall maintain the output frequency to ±0.1Hz of nominal frequency during Battery mode, Frequency Converter mode or when otherwise not synchronized to the utility/mains source.

2.2.2.5 Output Protection

The UPS inverter shall employ electronic current limiting circuitry for protection during Normal mode and battery operation and shall employ input circuit breaker protection during Bypass mode operation.

2.2.3 Display and Controls

2.2.3.1 General

The UPS shall be provided with a microprocessor-based control and a status display section designed for convenient and reliable user operation. The monitoring functions such as status and alarm indicators shall be displayed on a front-panel LED display.

2.2.3.2 System Indicators

The UPS shall include five individual LED status indicators and three rows of LEDs to indicate UPS load and battery capacity. An audible alarm shall be used in conjunction with the visual indicators to indicate to the operator a change in UPS operating status.

All audible alarms can be silenced, with the exception of low battery, bypass reminder and missing batteries at startup alarms. Once silenced, the audible alarm shall not sound until a new alarm condition is present. Standard LED indicators are described below:

- **Load Level indicators:** 10 total: 4 green and 1 amber, for each of the L1 and L2 outputs. The Load Level indicators shall display the approximate load level at all times.
- **Battery Capacity indicators:** 5 green LEDs. The Battery Capacity LEDs shall display the approximate level of battery reserves.
- **Fault indicator:** 1 red LED. The Fault indicator LED shall illuminate if the UPS detects an internal problem. One or more of the Battery Capacity indicators may be illuminated to aid in diagnostics.
- **AC Input indicator:** 1 green LED. The AC Input indicator LED shall be illuminated when utility power is available and falls within the input specification.
- **UPS ON indicator:** 1 green LED. The On Inverter indicator LED shall be illuminated when the UPS inverter is operating and supplying power to connected loads.
- **On Bypass indicator:** 1 amber LED. The On Bypass indicator LED shall be illuminated when the bypass source is supplying power to connected loads.
- **On Battery indicator:** 1 amber LED. The On Battery indicator LED shall be illuminated when the AC Input is out of the acceptable operating range.

2.2.3.3 On-Standby-Off Controls

UPS startup and shutdown operations shall be accomplished by the ON and STANDBY push buttons on the front panel of the UPS. The ON push button shall be a means to turn the UPS on and shall also serve as a means to manually test the battery. The STANDBY push button shall allow manual transfers of the load from the inverter to bypass power. Pressing the STANDBY push button in Bypass or Battery mode shall completely shut down the UPS and its connected load.

2.3 ON-LINE BATTERY TEST

The UPS shall feature an automatic battery test with the factory default test interval set at every 2 weeks. The battery test shall ensure the capability of the battery to supply power to the inverter while loaded. If the battery fails the test, the UPS shall display a warning alarm to indicate the internal batteries need replaced and resume operation without disturbing the load. The battery test feature shall be user accessible by the push button on the front of the unit.

2.4 BYPASS

2.4.1 General

A bypass circuit shall be provided as an integral part of the UPS. The bypass shall have a make-before-break transfer, shall have a maximum detect and transfer time of 4-6 milliseconds and shall be a double-pole device. The bypass circuit shall be designed to ensure the simultaneous transfer of the L1 and L2 poles. The bypass shall be configured to wrap around the PFC converter, battery charger, DC-DC converter, inverter and battery. The bypass circuit shall use the rear-panel mounted UPS input circuit breaker and route bypass power through the UPS input filters and surge suppression circuit. The bypass circuit default position shall be in the Bypass mode (utility).

2.4.2 Automatic Transfers

The transfer control logic shall activate the bypass automatically, transferring the critical AC load to the bypass source, after the transfer logic senses one of the following conditions:

- UPS overload
- UPS overtemperature
- PFC failure
- Inverter failure
- DC bus overvoltage

Once the overload condition is reduced, the load shall be automatically transferred back to inverter power. An overtemperature requires manual transfer back to inverter power after cooling.

2.5 INTERNAL BATTERY

Valve-regulated, non-spillable, lead acid cells shall be used as a stored-energy source for the specified UPS system. The battery kit shall be internal to the UPS cabinet and sized to support the inverter at rated load and power factor with an ambient temperature of 77°F (25°C) for a minimum of 5 minutes reserve time. The expected life of the battery shall be 3-5 years or a minimum 250 complete discharge cycles at ambient temperature of 77°F (25°C). To promote battery service life and eliminate over-discharge of the battery, the end-of-discharge DC shutdown voltage shall be automatically adjusted by the microprocessor based upon the percentage load at the onset of battery operation.

2.6 OUTPUT DISTRIBUTION

Output distribution shall be integral to the UPS cabinet and located on the rear of the unit. The output distribution shall provide the capability to re-configure the UPS input and output connections via a removable sheet metal power distribution box. Distribution options shall be available with break-before-make maintenance bypass switch to allow for complete shutdown and isolation of the UPS for service without powering down the connected loads. Maximum transfer time of the maintenance bypass switch shall be 4-6ms. Standard output distribution configurations shall be:

Distribution Model	Utility Input Connection	Output Load Connections	Maintenance Bypass
PD2-101	Hardwired Input 60A	Output - (8) 5-20R (T-Slot), (2) L6-30R	Included
PD2-102	Hardwired Input 60A	Output - (4) 5-20R (T-Slot), (4) L6-20R	Included
PD2-103	Hardwired Input 60A	Output - (4) 5-20R (T-Slot), (4) L6-30R	Included
PD2-104	Hardwired Input 60A	Output - (4) 5-20R (T-Slot), (2) L6-30R, (2) L6-20R	Included
PD2-105	Hardwired Input 60A	Output - (4) 5-20R (T-Slot), (2) L5-30R, (2) L5-20R	Included
PD2-106	Hardwired Input 60A	Output - (4) L5-20R, (4) L6-20R	Included

2.7 ON-BOARD COMMUNICATION

The Liebert GXT3 shall offer multiple communication options such as:

A. USB: All models shall work with the Power Management system in Microsoft® Windows® 2000, Windows XP, Windows Vista®, Linux and Mac OS® X.

B. Remote Emergency Power Off (REPO): The UPS shall be equipped with rear-panel terminal connections for interface with either a normally open (N.O.) or normally closed (N.C.) field-supplied switch. The remote emergency power off function shall allow the user to disable all UPS outputs in an emergency situation. Connections must not exceed NEC Class 2 limits. Activation of the REPO circuit shall disable the UPS until the following occurs:

- REPO contacts are reset.
- User restart of the UPS using the front control panel.

C. Terminal Block Communication: includes 8 pins

Pin	Definition
1 & 2	Low Battery Warning
3 & 4	On Battery Warning
5 & 6	Any Mode Shutdown
7 & 8	Battery Mode Shutdown

D. Liebert IntelliSlot® Port

Simultaneous communication shall be available via terminal block (EPO), USB and Liebert IntelliSlot.

2.8 LIEBERT INTELLISLOT COMMUNICATION OPTIONS

The UPS shall include one Liebert IntelliSlot communication port to allow the operator to field-install optional Liebert IntelliSlot communication cards. Liebert IntelliSlot cards may be installed during any state of UPS operation (On, Standby or Off states). Available Liebert IntelliSlot options are described below.

Liebert IntelliSlot Web Card (IS-WEBCARD)

The optional Liebert IntelliSlot Web Card shall deliver SNMP and Web management to the UPS when connected to any 10 or 100 Mbit Ethernet network. The card shall support 10 and 100 Mbit Ethernet and shall provide for in-the-field upgrade of SNMP firmware. The kit shall include the Liebert IntelliSlot card, MIB, configuration cable and user manual. Once the card is installed, serial communication shall be disabled in the DB9F connector; however, the photo-coupler signals (On Battery and Low Battery) shall remain active.

Liebert IntelliSlot Relay Interface Card (RELAYCARD-INT)

The optional Liebert IntelliSlot Relay Interface Card shall provide contact closure for remote monitoring of alarm conditions in the UPS, delivering signals for On Battery, On Bypass, Low Battery, Summary Alarm, UPS Fault and On UPS. The contacts shall be rated for 24VAC or 24VDC at 1A. Connection shall be to a DB25F connector with cable provided by the end user.

2.9 LIEBERT GXT3 CONFIGURATION PROGRAM

An included Microsoft Windows-based (Windows 95 or later) Configuration Program and cable shall allow configuration of UPS features and operating parameters to meet specific application requirements, if required. Options that are configurable via this program shall include:

- Select one of five output voltages to match input voltages of 200/100, 220/110, 220/127, 230/115 or 240/120.
- Enable / Disable Auto-Restart.
- Select frequency converter operation with a fixed output frequency of 50 or 60Hz. Bypass is disabled during Frequency Converter mode.
- Set the Low Battery Warning alarm time from 2 to 30 minutes.
- Disable the Auto-Battery test.
- Set the Auto-Battery test interval to 7, 14, 21 or 28 days.
- Select the number of external battery cabinets connected to the UPS to adjust the remaining run-time calculations reported by the UPS Liebert software products.
- Modify the shutdown setting of the Any Mode Shutdown.